

WHAT IS CLAIMED IS:

1. A substrate processing apparatus supplying a fluid to a rotated substrate for performing prescribed processing, comprising:

5 a substrate holding/rotating element holding and rotating said substrate; and
an atmosphere blocking member, corresponding in planar shape and size to said substrate, arranged oppositely and proximately to at least one surface of said substrate held by said substrate holding/rotating element and formed with a processing solution discharge port and a gas discharge port discharging a processing solution and gas to the
10 central portion of said surface of said substrate respectively, wherein

an outer gas discharge port is formed on said atmosphere blocking member outside said gas discharge port in plan view for discharging gas to said surface of said substrate held by said substrate holding/rotating element.

15 2. The substrate processing apparatus according to claim 1, wherein
said outer gas discharge port is so formed on said atmosphere blocking member that an arrival position of said gas discharged from said outer gas discharge port is closer to the center of said surface of said substrate held by said substrate holding/rotating element than an intermediate portion between the center and the outer peripheral edge of
20 said surface.

3. The substrate processing apparatus according to claim 2, wherein
said outer gas discharge port is so formed on said atmosphere blocking member that said arrival position is in the vicinity of said intermediate portion between the center
25 and the outer peripheral edge of said surface of said substrate held by said substrate

holding/rotating element.

4. The substrate processing apparatus according to claim 3, wherein
said outer gas discharge port starts discharging said gas in a delay from
5 discharge of said gas from said gas discharge port.

5. The substrate processing apparatus according to claim 4, wherein
the flow rate of said gas discharged from said outer gas discharge port is larger
than the flow rate of said gas discharged from said gas discharge port.

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6. The substrate processing apparatus according to claim 5, wherein
said gas discharge port and said outer gas discharge port are arranged inside a
support cylinder supporting said atmosphere blocking member in plan view.

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7. The substrate processing apparatus according to claim 1, wherein
said outer gas discharge port is so formed on said atmosphere blocking member
that an arrival position of said gas discharged from said outer gas discharge port is in the
vicinity of the center of said surface of said substrate held by said substrate
holding/rotating element.

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8. The substrate processing apparatus according to claim 7, wherein
said gas discharge port and said outer gas discharge port substantially
simultaneously discharge said gas respectively.

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9. The substrate processing apparatus according to claim 8, wherein

the flow rate of said gas discharged from said outer gas discharge port is larger than the flow rate of said gas discharged from said gas discharge port.

10. The substrate processing apparatus according to claim 9, wherein
5 said gas discharge port and said outer gas discharge port are arranged inside a support cylinder supporting said atmosphere blocking member in plan view.

11. A substrate processing method supplying a fluid to a rotated substrate for performing prescribed processing, comprising steps of:
10 rotating said substrate by a substrate holding/rotating element;
arranging an atmosphere blocking member corresponding in planar shape and size to said substrate oppositely and proximately to at least one surface of said substrate held by said substrate holding/rotating element;
discharging a processing solution from a processing solution discharge port
15 formed on said atmosphere blocking member to the central portion of said surface of said substrate rotated by said substrate holding/rotating element;
discharging gas from a gas discharge port formed on said atmosphere blocking member to the central portion of said surface of said substrate; and
discharging gas from an outer gas discharge port formed on said atmosphere
20 blocking member outside said gas discharge port in plan view to said surface of said substrate.

12. The substrate processing method according to claim 11, wherein
said outer gas discharge port is so formed on said atmosphere blocking member
25 that an arrival position of said gas discharged from said outer gas discharge port is closer

to the center of said surface of said substrate held by said substrate holding/rotating element than an intermediate portion between the center and the outer peripheral edge of said surface.

5 13. The substrate processing method according to claim 12, wherein
said outer gas discharge port is so formed on said atmosphere blocking member
that said arrival position is in the vicinity of said intermediate portion between the center
and the outer peripheral edge of said surface of said substrate held by said substrate
holding/rotating element.

10 14. The substrate processing method according to claim 13, wherein
said outer gas discharge port starts discharging said gas in a delay from
discharge of said gas from said gas discharge port.

15 15. The substrate processing method according to claim 14, wherein
the flow rate of said gas discharged from said outer gas discharge port is larger
than the flow rate of said gas discharged from said gas discharge port.

20 16. The substrate processing method according to claim 11, wherein
said outer gas discharge port is so formed on said atmosphere blocking member
that an arrival position of said gas discharged from said outer gas discharge port is in the
vicinity of the center of said surface of said substrate held by said substrate
holding/rotating element.

25 17. The substrate processing method according to claim 16, wherein

said gas discharge port and said outer gas discharge port substantially simultaneously discharge said gas respectively.

18. The substrate processing method according to claim 17, wherein
- 5 the flow rate of said gas discharged from said outer gas discharge port is larger than the flow rate of said gas discharged from said gas discharge port.